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Contributed Articles.

On Important Apian Subjects.

Best Capacity and Shape for Brood-Chambers, and How Obtained.

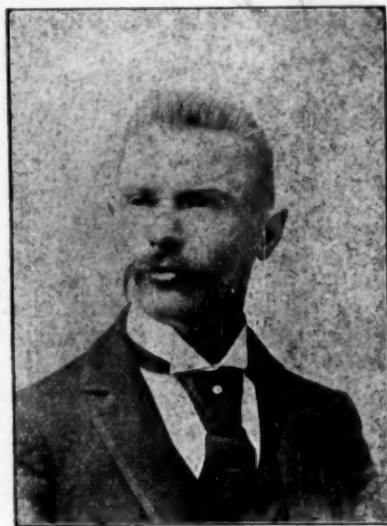
BY C. W. DAYTON.

In 1882, in my apiary in Iowa were 120 brood-chambers 3,466 cubic inches in capacity, and carrying 16 Gallup frames $11\frac{1}{4} \times 11\frac{1}{4}$ inches. The inside measure of this hive was one foot in depth and width, and 24 inches in length. It was designed to run the whole number of combs for brood-rearing up to the opening of the honey harvest, when an upper story was supposed to be necessary for the accommodation of extracting-combs. Or, where the colony was operated for comb honey, the least occupied combs were taken out and the space in the ends of the hive filled with 2-pound sections. Two-pound sections being six inches square, four of them exactly fitted the end of the hive when set upon the bottom-board. I have often wondered why the Gallup hive or frame was devised. Because the hive could be constructed of 12-inch lumber, or because the hive was the width and depth of two 2-pound sections, or what?

Well do I remember the failure of the queen to fill to my satisfaction all the 16 frames. Then I thought the brood needed spreading. The result of much spreading was brood scattered and thinly disposed in many combs, so that much of it chilled in the cold nights. After three years' use it was found that not more than one-half of the colonies would become populous enough to require an upper story, if the honey was extracted and not allowed to accumulate in the lower story. At this time the ends of the hives were sawed off to reduce the number of combs to 12. After a couple of seasons' use, the brood-chambers were decided to be still too large. There continued to be from three to six combs of honey instead of brood in the lower story. The honey was wanted in the upper story. Again the hives were sawed off, reducing the number of frames to nine. This brood-chamber contained 2,088 cubic inches. That sized brood-chamber was continued for several seasons following, with perfect satisfaction, so far as size was concerned—the lower story contained the brood in compact form, and the super story caught nearly all the honey whenever the honey-flow was of consequence. Yet attention was required to provide sufficient winter stores. This was done by the retention of full combs of honey reserved at extracting time. This procedure causes a little more labor at the time of preparing the colonies for winter, but it is far more than balanced by our being able to avoid unnecessary combs of honey in the hives during the busy season. About one queen in 40 appears to want two stories for brood, but I

believe that such brood when compactly disposed can nearly always be contained in the lower story.

In 1889 I began to look favorably toward the production of comb honey in $4\frac{1}{4} \times 4\frac{1}{4}$ sections, and the dimensions of the Gallup hive was deemed exceedingly unfavored to the adaptation of the standard one-pound section. I was compelled to adopt the Langstroth measurements. For two seasons I handled 40 colonies, followed by one season of 250 colonies, on Langstroth frames in both 8 and 10 frame hives. As a 10-frame colony is examined, it seemed as if the same amount of brood could be reared in an 8-frame hive; yet when a colony has been brought up in an 8-frame it seems to possess less



Mr. W. A. Chrysler—See page 536.

available strength. The 8-frame colony does not enter the super in greater force than does the 10. But when a 10-frame colony is contracted down to 8 frames, there is a perceptible increase of energy. I account for it in this wise: There is seldom any brood in the two outside combs. This leaves 8 combs for brood in a 10-frame hive. Take away one more comb for the pollen, and there remains 7 combs with brood in. Apply the same conditions to the 8-frame hive, and only 5 combs remain for brood. Allowing $1\frac{1}{4}$ inches to the comb, the lateral diameter of the brood sphere is $7\frac{1}{4}$ inches, while if the whole length of the comb was to be occupied, it would be 17 inches. The 10-frame hive exceeds the 8-frame not by two segments at the sphere's edge, like the slabs which are sawed from a log, but it corresponds to two perfect and complete planks from the heart of the log. This would enhance the strength of the colony one-half instead of one-fourth, as may be supposed.

The disproportionate frame length may not cut so prominent a figure in a southern California climate as in northern latitudes—Colorado, for example. In Colorado the nights, even late in the spring, are surprisingly chilly. Then the middle of the days are as warm and sunshiny. In hives facing south the sun beats against the end so warmly that it draws the brood toward that end compactly against the end-bars of the frames, and to the very corners. Where there was brood in 8 combs, it was placed so far to the south that 6 inches of the north ends of the combs might have been removed without disturbing a cell of brood.

In Wisconsin there are more clouds during the days, and the days and nights are nearer of an even temperature. When two colonies are placed side by side, with an inch of pressed chaff between the hives, the brood in each colony occupies the side of the hive nearest its neighbor. Even the side combs contained brood on both sides. The remote sides of the hives were unprotected, and the weather inclement. If brood will be placed far away from the cold end of a Colorado hive, why would it not be placed as far as possible from the four sides of the Wisconsin hive?

When a 10-frame hive is changed to an 8-frame, by taking away two frames, it forms a chamber which is really longer, in effect, than the original 10-frame chamber because of the narrowed brood sphere. In other words, and in consideration of climates, kinds of weather and different seasons, there is less consequence in *how much* space is removed than in *how* it is removed. Working against the natural tendency wastes warmth and energy.

Had there not remained a broodless space in the ends of the combs of the 10-frame hive, the 8-frame hive would never have suggested itself. Nearly every one who went down to 8-frames has wished that he were back again. Instead of decreasing the number of frames, why not try the same number of frames of *less length*. I have kept bees from a "bread and butter" standpoint in Wisconsin, Iowa, Colorado and California, and have found the hive from which I never expect to change. Climates and localities do not affect its utility. It is the crosswise Langstroth of 10 frames, or 2,020 cubic inches. The 8-frame Langstroth contains 2,100, and my old 9-frame Gallup hive 1,980 cubic inches. The 8-frame Langstroth is large enough, but the shape is very bad. Since using ten 13 $\frac{1}{2}$ -inch frames to the hive for three seasons, I believe that the colonies become as strong as with the 17 $\frac{1}{2}$ frame. If it was calculated to have winter stores in the ends of the long frames, or in the side combs, I should want at least 12 of them.

I have arrived at the 2,000 cubic inches capacity of the brood-chamber, from two starting points in the past 13 years, by cutting down and trimming off the useless encumbrances.

For winter, or for an abundance of stores at any emergency, a half-depth story remains upon the hives, and the honey is nearly all kept in it. Bees readily enter and replenish a receptacle from which they are accustomed to obtaining their daily rations. With this super there it is always ready to catch a small run of surplus, and enables the surplus receptacles to be placed very near to the brood. The brood-chamber is 14 $\frac{1}{4}$ inches square by 14 $\frac{1}{4}$ inches deep, forming an almost perfect cube.

Florence, Calif.



A Plea for Extending the Honey-Resources.

BY J. A. GOLDEN.

The terrible drouth we have had in this locality has completely blasted all hopes for any surplus, unless a fall flow comes, of which we have but little hopes from present indications.

The basswood was so heavy with bloom that it seemed the limbs would break from the trees, and for three days I never

saw so many bees work on them before at one time, but the drouth was too much for them, and the bloom was of but short duration.

The white clover was so badly dried up that scarcely a bloom could be seen even along the water-courses. The tulip, or poplar, yielded fairly well, but was soon dried up. The sumac would have been all that could be desired, could we have had one or two good showers during its bloom, but likewise it had to follow in the same line, and unless we have other sources from which bees can procure nectar throughout this location, bee-keepers will have to look for other fields, or abandon the bee-business.

It seems that the farmers in this southeastern part of Ohio have had but little desire to sow Alsike, crimson or alfalfa clovers. Having read Frank Coverdale's letter on Alsike clover, published in the bee-papers some time ago, I had it republished in our county paper, with my own remarks, thinking to induce some of our farmers to make trial experiments, from which several farmers became anxious to sow the Alsike, but withheld on account of the drouth. Wishing to know more about the cultivating of Alsike clover than Mr. Coverdale gave in his article, I wrote him for full particulars for publication, to which he kindly responded, and I had it published, and if next year should be favorable for seed sowing, there will be quite a little sown in this section, as I believe every farmer that got a copy of the Coverdale article has preserved it, so far as I have inquired, and if bee-keepers in localities where the honey-sources are fast disappearing, don't make some effort to encourage and induce the farmers to grow honey-producing plants or grasses, the profits from honey in such localities will be small.

Would it not be wisdom for bee-keepers to have more knowledge like Mr. Coverdale gave on Alsike clover, as a profitable investment, spread upon our county papers from time to time? Thus hundreds of farmers would be encouraged to raise the new grasses to their well deserved profit, as well as procuring a bountiful supply of the most healthful sweets that God has deigned to bestow upon man.

Then, bee-keepers, let us not stand idly by and see the bee-industry die for the want of honey sources, but step to the rescue, even to purchasing the seed, if need be, and thus assist to our own good. This is not only right, but our duty as well. There are hundreds of farmers who, if presented with a few pounds of seed, would gladly accept it, and give the matter of its production their most careful attention, and soon the waste-places all over our country would bloom for our bees to revel in, and make glad many a bee-keeper's heart.

Reinersville, Ohio, July 29.



Honey-Production Around the City of Philadelphia, Pa.

Read before the Philadelphia Bee-Keepers' Association

BY F. HAHMAN, JR.

I do not consider myself quite equal to the task of writing on this subject, but I will give such data and figures about the amount of honey produced in this section, as the facts in the case appear to me from such observation as I have been able to make.

We all know that Philadelphia is not an especially good honey market compared with other cities, this fact being mainly due to the lack of enterprise shown by the bee-keepers themselves. The honey handled by the wholesale dealers and commission houses is all shipped to the city from a distance; while the honey produced in the vicinity of the city is all sold directly to the consumer by the producer.

The amount of honey, both comb and extracted, produced within a radius of 12 miles of Philadelphia is about 22,500 pounds, in round numbers. This calculation is based on the

product of 1,500 colonies, with an average of 15 pounds per colony. It is difficult to estimate exactly how many colonies are actually kept within the above radius, but from various inquiries among the bee-keepers, and from personal observations, I find that 1,500 colonies to be about the number kept. The average of 15 pounds per colony represents the actual production very closely.

The average amount of honey produced around Philadelphia by those employing the latest improved hives and apparatus, and managing their bees carefully, is from 25 to 50 pounds of comb honey, or from 40 to 75 pounds of extracted honey per colony; naturally there are exceptions to this rule, some of the bee-keepers obtaining larger returns, due to an extra amount of energy and skill on their part; occasionally large yields are gathered as the result of an abundant yield of nectar by the flowers; such yields are analagous to a good year for farm crops, or a good fruit year, and occur at intervals of five or ten years apart; in estimating the returns received from the bees, these extra-good seasons do not increase the ratio of average production, on account of being counterbalanced by an occasional year when the honey crop is a failure, when the flowers secrete little or perhaps no nectar whatever.

I believe a safe estimate for the production around this section, so far as comb honey is concerned, is about 25 pounds per colony during the regular honey-flow in May and June; and to this we can frequently add about 15 pounds during the fall months, making a total of 40 pounds; allowing each colony to provide its winter stores in addition to the above.

At this point I wish to call attention to the fact that some extra-strong colonies will gather 60, 70, or even more, pounds of surplus honey in a season, but to bring the overage of a whole apiary, including the weaker colonies, to 40 pounds, requires extra-good management.

The price received for this honey by the Philadelphia bee-keeper is about 15 cents per pound; many receive more, however, and that is usually the result of shrewd business talent; but 15 cents represents the selling price at which we can dispose of our honey readily, and in quantity if necessary; hence we find that our returns are about \$6.00 per colony, as the result of considerable hard work.

The production of extracted honey will yield a somewhat larger cash return per colony, where the bee-keeper is able to readily dispose of the same at 10 cents per pound, but it is difficult to sell large quantities of extracted honey, except at a price yielding no profit to the producer.

The quality of the honey gathered in the Philadelphia district is good, generally speaking; it is not of the superior amber shade of basswood honey, nor quite so fine flavored as the white clover honey of our Western States; but it is far superior in taste to the light-colored basswood honey, consigned to our city from the large apiaries of New York and Vermont, which is considered by our wholesale dealers the acme of all honey-production. The consumer of honey will prefer our home-produced article, to the vaunted basswood honey, after one trial in nearly every instance.

The source of our flow of honey during June is white clover, with the admixture of nectar from several trees, blooming about the same time; such as the tulip tree, basswood, catalpa, honey-locust and others; also the honey from the blossoms of the onion, which is extensively cultivated in the market gardens around the city, some of these giving the honey a darker color, and a slightly different flavor from pure white clover honey. The sources of this dark honey sometimes fail, and we have at such times obtained fine white clover honey without any admixture. The honey gathered on the opposite side of the Delaware, in New Jersey, is generally of this kind, because the honey-yielding trees do not abound there.

The honey gathered during August and September is principally from buckwheat, and enough honey from asters and goldenrod to take away the rank flavor of pure buckwheat honey. During some seasons the fall flowers, particularly asters, yield so abundantly that but little buckwheat honey is stored, the honey being equal in flavor and appearance to the early summer crop.

We frequently read in the bee-journals how to prepare our comb honey in attractive shape for the market, and it is well for all of us to grade our honey carefully. Beautiful white section-boxes, nicely capped, without any leaks, should always be sorted to themselves, and will at all times command a fancy price; while a second grade of darker honey, and boxes with some few cells not capped over, can be sold somewhat cheaper, and will therefore find a ready sale. We can also have a third quality of comb honey, such sections as the bee-keepers from a distance can never send to market—sections that are not fully capped over, perhaps one-fourth of the cells remaining uncapped; it is always more profitable to sell this kind of honey than to hold it over for the bees to finish the following season; the remuneration obtained for it will be perhaps not much over half of that obtained for first-class honey, but it will help to swell the general income from the bees, and form an item which the bee-keeper, who ships his honey to a distant market, can never take advantage of.

Unless I am greatly mistaken, there are no bee-keepers around Philadelphia who make honey-production an exclusive business as a means of gaining a livelihood, and I do not think that the production of honey holds out sufficient inducement to a live, energetic man to engage in, with the above end in view; but as an auxiliary branch it certainly offers a rich field to all of the near-by farmers, who attend the retail markets of our city and dispose of their farm products direct to the consumer. Vast quantities of honey could thus be sold, netting the producer the highest possible return, and materially augmenting the income of our rural population. If comb honey were thus displayed for sale on the farmer's stalls, the conditions of a poor demand for honey would soon fade away, and give place to an ever-increasing demand for good honey produced in our immediate neighborhood.

The price realized by the farmer would always remain at the top notch, nor need he ever fear the competition of the large honey-producers who ship to the city from a distance, any more than he fears the inroads on his trade of the egg and butter dealers, who sell cheaper than he does; he always manages to sell his produce of that kind at a little higher figure than the dealers ask for theirs.

To secure a good supply of honey, it is necessary to stimulate the bees early in the season, ensuring plenty of worker-bees when the honey harvest arrives. Mr. G. M. Doolittle has contributed many excellent articles on the production of comb honey; one of his methods is to have all swarming over before the large basswood honey-flow arrives. All his colonies that have not swarmed up to the beginning of the basswood flow, are "swarmed" artificially. Mr. Doolittle's plan is to have the colonies in the utmost populous condition during the honey-flow; in this lies the secret of harvesting large crops of honey, as Mr. Doolittle's success in that line has amply proven.

Philadelphia, Pa.



Five-Banded Bees—Preventing Swarming.

BY REV. W. P. FAYLOR.

Having had a good deal to do with the very yellow bees, and after spending much money, time and labor to propagate them; and having tried them from every source obtainable—from the East, West, North and South—I have been requested to give my opinion of them. I have hesitated to do so, for fear of trampling upon somebody's feet, but what I shall

have to say is on my own line of experience, and is presented with the best wishes to all bee-keepers.

I obtained my first 5-banded bees from L. L. Hearn, but in a very short time I learned that G. M. Doolittle had given Mr. Hearn his start in these bees. Mr. Hearn's bees proved to be unprofitable, and so the next queens were obtained from the author of "Scientific Queen-Rearing." The first queen I obtained Mr. Doolittle had named "Dandy," for which I paid \$6.00. I introduced her to hatching brood, as the weather was warm, and everything seemed favorable for a colony of "goldens," as I added a few more frames of hatching brood; but what was my surprise in a couple of weeks to find this fancy queen failing. I then put her into a nucleus and kept her colony weak until autumn. Early in October I put her nucleus in a chaff hive, and gave her plenty of good combs with nice, sealed honey, and brood hatching, from a good hearty colony, and as I knew the bees would not expect much from their queen during the winter, I left them severely alone until early in the spring.

On opening the hive I found a young queen and "Dandy" still at large in the hive. I lifted out a comb with "Dandy" and adhering bees, making a weak nucleus. In three weeks "Dandy" had disappeared, and three queen-cells were started. These were given to a strong colony, made queenless, to feed and complete the cells. Mr. Doolittle sent another to replace her. That was very kind in him, but the second one never filled more than three or four Langstroth frames with brood; and from this queen, and the three reared from "Dandy," I reared 29 queens, nearly all of which I sold for \$2.00 for choice, and \$3.00 for the selected or very best. Some of these queens were sent to Canada, and some to Pennsylvania, some South and West. Some of the old readers will remember that I sent the samples of bees to Thomas G. Newman, the then editor of the American Bee Journal. The bees sent showed the sixth yellow segment. Of course these were picked bees. So far as I can know, and have knowledge, not one of these reared fancy queens produced bees that were hardy enough to come through the winter without adding black stock.

My next breeder was a very yellow one from J. D. Givens, of Texas. This queen kept two or three combs fairly stocked with brood and eggs for about three months, and then was superseded by the bees. I keep bees partly for pleasure and study, and took a fancy to the yellow color; but now I am about dead to the "goldens," though it was a hard death to die.

Last autumn I ordered one more of these queens from Mr. Wood, of Massachusetts, and one from the famous breeder of these bees in Maryland. I gave each plenty of combs with late hatching bees from hardy blacks—these were packed in a long chaff box containing 11 colonies. One of these colonies died early in the winter. The other was about fizzled when I unpacked them in the spring. The queen was yet alive, and a few black bees, but not a single yellow bee lived through the winter.

But the greatest fault I find with them is the unprofitableness of the queens. I never had a colony of them to get populous enough to get the swarming-fever. When these queens mate with hybrid drones, they are some better, but all in all the "goldens" ought to soon be a thing of the past, unless they can be improved in some way.

THE PREVENTION OF SWARMING.

To keep bees from swarming, I practice the following method:

1. I keep the drone-brood shaved out. Bees will swarm with but few drones, but they are sure to swarm when crowded with drones.

2. When the colony begins to get strong, I put a couple of the middle combs on the outside, and the two outside combs in the place of the two middle ones removed, then remove two

more of the middle combs, and in their place put two empty combs. Now the bees will begin to think they are not quite ready to rear drones and young queens.

3. Raising the entire brood-chamber by placing a piece of lath under each corner of the hive or brood-body, so that the air can freely circulate under the entire cluster of bees, is the best preventive of swarming of any one thing that can be done. I believe I am the first to make mention of this through the American Bee Journal. I have often discouraged swarming even after queen-cells had been started, by simply raising the brood-chamber a fourth of an inch from the bottom-board; and with what a rush will the bees crowd into the upper apartments when this is done!

Updegraff, Iowa.

Canadian Beedom.

The North American Bee-Keepers' Association.

The July number of the Bee-Keepers' Review is chiefly devoted to a consideration of the above-named organization. In commenting on one of the articles, the editor says: "AGitation was done away with at the last annual meeting." This will be news to many. But as no full report of the last annual meeting has yet been given to the public, only those who were actually present can be expected to know what business was done. It is to be hoped that the Secretary will see to it that the Constitution and Rules now in force are printed for consultation by the members. Otherwise they will be like moles, working in the dark.

[The Constitution as revised at the last annual meeting was published on page 60 of the American Bee Journal for Jan. 24, 1895.—EDITOR.]

Mr. W. A. Chrysler.

W. A. Chrysler, whose picture is shown on the first page this week, was born Nov. 14, 1863, in the Province of Quebec, Canada, and at an early age moved to the Province of Ontario with his parents and settled on a farm near Chatham. His time was spent at practical farming and obtaining a fair business college and high school education.

When about 17 years of age he took the "bee-fever" very badly, as some call it, and he has had it ever since, with no let-up.

Soon after embarking in the bee-business (having wheels in his head) he began making some of his own supplies, not that he could not buy them cheap enough, but it was, and is, his special delight to work with machinery as well as with the honey-bee. He made most of his machinery and learned to operate it by practical experience. People looked to him for supplies and he naturally drifted into the supply business in connection with the bee-business.

Mr. Chrysler takes special delight in attending bee-keepers' conventions, and no doubt will be on hand at the Toronto meeting of the North American. The Ontario Bee-Keepers' Association, at its last meeting, elected him as one of its Directors.

He has been married nearly five years, and has one of the best of wives and two bright children—a girl and a boy.

Honey-Producers and Apicultural Organizations.

In giving his opinion about apicultural organizations in the July Review, Mr. James Heddon says one weak condition in connection with them is that the leaders have not been honey-producers, consequently they were not filled with api-

cultural, enthusiasm. The term "honey-producers" is here meant to indicate people who get their livelihood by keeping bees. Strictly speaking, all who keep bees are honey-producers in a greater or less degree. Even those who keep bees as a scientific pastime get some honey, and are therefore in a sense honey-producers.

At the very outset Mr. Heddon makes an incorrect statement, which I boldly deny. He says the leaders in our apicultural organizations have not been honey-producers. I assert, on the contrary, that even in the sense of making a business of honey-production, the leaders in these organizations have been of that class, and I appeal to the records of membership for proof of what I say.

In answering the question what caused these non-honey-producers to attend conventions and seek a leading position there, he says: "Some desired to be seen." How does he know that? Did any of them confess to him that this was their motive? Not likely. Others, he says, had axes to grind. Again, how does he know? He could only suspect, and was he not open to suspicion himself with his pollen theory, his new hive, and other contraptions? He says further, that these men had some money speculation in view. Suppose they had. If it was honest speculation, there was no harm in that. Why, Mr. Heddon's only object in bee-keeping is to make all the money he can at it. There are some bee-keepers who pursue the business for scientific purposes, or for the public good. Mr. Heddon is not of that number. He despises all such, and is never tired of pouring contempt on them. He is the last man who should complain of a bee-keeper who goes to a convention to make a little money. He never went to one himself for any other purpose. Time and again he has asserted that he takes no interest in any phase of bee-keeping except for the money there is in it.

Mr. Heddon enumerates as the prominent ones at conventions: "Preachers, professors, publishers, supply dealers, and a few side-issue bee-keepers, who have been at the front as leaders because of their energies to get there, and the foolishness of bee-keepers to assist them." Let us look at the classes here specified, for a moment. 1. "Preachers." Mr. Heddon may kick at the fact as much as he pleases, but he cannot get rid of it as a fact that there is no class who have rendered bee-keeping more substantial service than "preachers." If there were only one name of this class to mention, that of Langstroth should be enough to protect it from indignity and crown it with honor. But there is a long list of such names, and those which have been connected with apicultural conventions have been no discredit to them. "Some preachers can talk well," Mr. Heddon admits, as if what they said were all talk. Is this honest truth or unfounded slander?

Mr. Heddon next pays his respects to "professors." In all the history of our conventions, I can only now think of two "professors": Prof. Kirtland, who originated the first apicultural convention held in North America, and Prof. A. J. Cook, who certainly doesn't play second fiddle to Mr. Heddon or any other live bee-keeper on the continent. 3. "Publishers"—who certainly had a right to be there to report the proceedings. 4. "Supply-dealers"—whose business naturally and properly took them there. 5. "A few side-issue bee-keepers." Why, the vast majority of bee-keepers are of this class. There are not half-a-dozen honey producers in Mr. Heddon's exclusive sense on the face of the earth. He is not one himself. Yet he says, "First, give us honey-producers, and then give us the best speakers and writers, from among that class." The italics are his.

The thing is absurd on the very face of it. See how it would work in other directions. Would you exclude all but teamsters, cab-drivers and such as handle horses for a living, from Horse Associations? Would you exclude all but farmers from the management of Agricultural Associations? We have

"the greatest show on earth" of this kind here in Canada. If you doubt this, come and see it when the North American bee-keepers meet in Toronto, next month. That great Industrial Fair was gotten up by business men, and has been run by such from the beginning until now. Mr. Heddon says "the organizers and manipulators of our associations are possessed of too much theoretical talent;" but a man may be a good, practical bee-keeper, and yet have no talent as an organizer or manipulator. Mr. Heddon has no talent of this kind himself, or he would have shown it before now. He has had chances enough.

He says: "Put your preachers, professors, and most of your literary bee-keepers, back on the back-seats, where they can learn something practical," etc. Yes; get on a hustle, and make a big procession of them—Father Langstroth at the head, and Professor Cook following closely at his heels, other preachers, professors, and most of your literary bee-keepers "comin' arter," and see what a motley crowd you will have left, Mr. Heddon rallying them with a Salvation Army drum, to save the precious remnant—the "righteous few" who have no talent of preaching, professional or literary work upon them. Mr. Heddon is a nice man to be embarking in this kind of crusade. He undertook, all-sufficient practical bee-keeper that he is, to play a lone hand with a very modest literary venture, a bee-quarterly, no less. He would have no literary help—not he. He would "do it all himself, personally." Well, he has gotten out six numbers, and in the last makes the following humble confession:

"Now we begin to see that unless we make some kind of a change, we cannot fill our four large pages with really useful editorial matter many more issues, and we may be compelled to accept correspondence, and will be very glad to test our skill in selecting writers whose advices if followed will lead the readers on to success. We may also add some of our best original matter on some other subject, but at all events we shall endeavor to overlook nothing of value that appears in our bee-literature and observation."

Poor man! He may "be compelled to accept correspondence." Who will furnish it? No self-respecting literary bee-keeper, surely, after the contempt and derision Mr. Heddon has poured on this class of writers. N. B.—There has been great mortality among bee-periodicals. Most of them have failed for want of money. But this one is *in articulo mortis* for want of brains! In six quarterly issues this prolific writer has actually run out of topics! Not only is he afraid he will be "compelled to accept correspondence," but may have to "add some of our best original matter on some other subject." Well, whatever you do, Mr. H., don't follow A. I. Root's example and give us a sermon, because then you would rank among the preachers. Besides, the kind of discourse you would give would be like the plantation darkey's sermon on pig and chicken stealing—it would "bring a coldness over the meetin'."

If it be thought by any reader that this article is rather caustic, my apology shall be in Mr. Heddon's own words in the Review article I have been criticizing. They are as follows:

"Please excuse the plain and frank style of this essay, but you asked me for it and you have it. As you know, I am a very plain and outspoken man, but I mean well. I like to be talked to in the same way. And when I am wrong that kind of talk does me much good."

The last sentence is particularly gratifying. I am quite sure Mr. Heddon is wrong this time, and it is a great satisfaction to know that when he is so, it does him good to handle him without gloves. If he shows due improvement in the present case, I shall be encouraged to do it "some more."

That New Song—"Queenie Jeanette"—which is being sung everywhere, we can send you for 40 cents, postpaid, or club it with the American Bee Journal for one year—both for only \$1.10. Or, send us one new subscriber for a year (with \$1.00), and we will mail you a copy of the song free.

Questions AND Answers.

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

Hiving a Swarm that Settled on the Grass.

Please tell how to hive a swarm of bees that has settled in the grass. J. S. Y.

ANSWER.—The handiest thing in the world. Just set a hive on the ground near them, or over them, and let them run into it. If they don't go in fast enough to suit you, blow a little smoke on them.

Five-Banded Queen and Black Drone.

Will a 5-banded golden Italian queen, mated to a black drone, produce all 3-banded bees? If so, will they pass for pure Italians? P. W.

ANSWER.—I don't think you would find such uniformity, but would likely find the offspring varying from very yellow to black.

Variations of the Langstroth Frames.

I have 12 8-frame hives that I bought, all one size; they are the pattern that was used here some years ago, and they winter bees well.

1. What is the name of a frame 15 inches long and 10½ deep, with V-shaped top-bar for comb foundation?
2. Where can they be obtained? J. E. T. Orleans, Mich.

ANSWER.—I don't know. There are so many variations of the Langstroth frame it would be hard to keep track of them all.

Sweet and Crimson Clovers.

1. When is the right time to sow sweet clover seed, and how much per acre?
2. Is crimson clover a success for bee-men? Gracey, Ky. J. G. N.

ANSWERS.—1. Sweet clover can be sown as thickly as red clover, although half as much seed will do, and it can be sown at the same time. Possibly it may do best to be sown in the fall, on hard ground, where it will be trodden in by horses or cows.

2. Crimson clover has hardly a settled reputation as yet, but the claim is made for it that it is a fine honey-plant.

Laying-Workers Again.

On July 5 a little girl here found a swarm of bees on a bush, and put them into a nail-keg. On the 16th I bought them of her, and put them into a new hive with foundation in four frames. Upon transferring them I found that they had comb enough built to contain five or six pounds of honey, and about half of it filled, and some with bee-bread, but not a sign of an egg anywhere. I looked them over carefully, and could not find a queen, but found a bee that looked something like a small drone—a very large worker, with wings very ragged on the ends and edges, and seemed to be unable to fly much. I called it a drone, and immediately sent for a queen, and she came on the 19th; I introduced her in the regular way.

This morning I watched them, and they seemed to be at work, bringing both honey and pollen. This afternoon being 48 hours after introducing, I thought I would see what she was doing, and found they had hardly begun to let her out, so I thought I would examine the frames and see what they were doing below. Imagine my surprise at finding a great many half-drawn-out cells with eggs in them, some with one, some with two and three apiece. On one side of one frame was a cell that I should call a queen-cell, with three eggs in it, and on the opposite side a cluster of three nearly as large, but not hanging out as prominent, all containing from one to three eggs. Then I thought of my (so-called) "drone," and my

wife and I looked the frames and whole hive over very carefully, and could not find "him," so I placed the cage back on the frames and left them.

Now this thought occurred to me: Could it be possible that the queen in the cage is laying, and the workers are depositing the eggs in the cells? Was such a thing ever heard of?

The colony has been dwindling away since they were caught, and I have thought I should give them brood-frames from another hive as soon as they accept the queen all right. The eggs are deposited in the cells very irregularly, some on end, some leaning to one side, and some flat on their sides. I shall watch them with a great deal of interest, and would like you to give me what information and advice you can.

AMATEUR.

ANSWER.—Your colony contains those troublesome pests—laying-workers—and if you fail in successfully introducing the queen, as I am afraid you may, probably the best thing you can do is to break up the colony. If anxious to preserve it, however, give it a frame of brood. If you have a young queen just hatched, it will probably accept that.

Renewing Foundation in Brood-Frames.

How often would you supply foundation to brood-frames? How would you proceed? SUBSCRIBER.

ANSWER.—I'd supply it once for the lifetime of that frame. In that case, of course, it would be nothing but the ordinary fastening of foundation in the frame. Your question sounds a little as if you thought it necessary occasionally to renew the comb in whole or part. I don't believe that's necessary.

Feeding Back Comb Honey.

I have a lot of comb honey taken out of a box-hive. Can I feed it to the bees to help fill up sections? If so, how? H.

ANSWER.—I doubt if you can do so profitably. If it was mine, I'd eat the chunk honey, or sell it for a less price. If you try it at all, perhaps you better get the honey out of the comb and dilute it considerably. But the best plan is not to try it.

Queen at the Hive-Entrance.

I have just returned from a walk in my apiary. While among the hives I saw among the bees, on the alighting-board at the entrance of a hive, a large, yellow, Italian queen. The bees were blacks, and the queen looked very showy among them. About two weeks ago there hatched in this hive a yellow queen from a cell given from an Italian queen. At that time they had no queen. Now what did this mean? The bees seemed to be excited, and following her around. After crawling around this way awhile she went back into the hive, and did not come out again while I watched. Was this the queen that belonged to that hive, or was it one from some other? If it was the queen from some other hive, what was she doing there? Why did not the bees kill her? If it was the queen that belonged to that hive, what was she doing there? P. A.

ANSWER.—Hard to tell whether she belonged to the hive or not. If she belonged to the hive, she may have been out on her wedding flight, as that is sometimes delayed. If she belonged to some other hive, and flew there by mistake, the bees probably did kill her. But they don't always pounce on a queen and kill her as they do a robber, but let her go perhaps for a time and then ball her.

Caging Queens During a Honey-Flow—Best Hive Begin Bee-Keeping.

1. Do you approve of, and do many of your leading apiarists practice, caging the queen during a honey-flow?
2. What are the advantages to be gained? A greatly increased surplus?
3. And what the disadvantages?
4. Could the queen be confined in a Benton cage? And must a few other bees be in the cage with her?
5. If you—an experienced apiarist—had been some time out of the business, and were about to start bee-keeping, what sort of hive would you adopt—the divisional brood-chamber,

à la Heddon, or the Root dovetailed? If the latter, 8 or 10 frames?
S. A. D.

Mossel Bay, South Africa.

ANSWERS.—1. I do not think a very large number practice it. Some of our best men, however, have practiced it, and perhaps do so yet. I gave it a pretty full trial, but did not make a success with it. Whether the fault was with me or the system I cannot say.

2. The one advantage aimed at is the prevention of swarming. Along with that the expectation of a larger yield than if the bees swarmed, but hardly a greatly increased surplus.

3. I cannot say about the disadvantages with others, but with me there was the disadvantage that sometimes the bees swarmed as soon as the queen was freed, even though no brood was in the hive, and many colonies were greatly reduced in numbers, with no young bees, and the combs clogged with pollen. Besides, I don't think I had an increase of surplus.

4. The queen could be confined in any kind of cage that could be brought in close contact with the brood-nest, and no bees are needed in the cage with her.

5. The Dovetail, but I am unsettled as to size, and am earnestly seeking light upon the question. If, in the darkness of Africa, you have any light upon it, please send a glimmer across the waters.

The Sweet Clover "Song."

Is not the song of sweet clover turned wonderfully in the last year? We could then still read, "Sweet clover is a bad weed." Now we read, "It is a very valuable weed."

What! No honey at Marengo? Just a few days ago I took from each of two different hives 48 well-filled sections—8-frame hives, at that; but many have not half that much. We have had much wet weather the last six weeks.

Garden City, Mo., July 22.

G. J. Y.

ANSWER.—Yes, I think a change is taking place with regard to sweet clover. In two different counties where I have been this year, I have seen places along the road for a mile at a stretch where the sweet clover was kept eaten down by stock.

Swarms Leaving their Hives.

Why cannot I make the swarms of bees go into a hive? One large "gum" has sent out two swarms in two months. Each time I provided a clean hive, and to do away with all odors, rubbed it out with salt water and peach tree leaves. The bees hung about this new hive for a night and day, then left. Yesterday the second swarm came out, and I did as I have mentioned. The bees went into the hive, and I felt they would there take up their abode, but from some cause they came out, and went into the very same old gum they swarmed from. I would be grateful indeed if you would tell me why they act so, or what I have failed to do. I have only three or four colonies, and I dislike losing these new young swarms.

Waverly, Mo.

Mrs. S. Z. C.

ANSWER.—I hardly think the salt and peach leaves were the cause of the trouble, but at least I think they did no good. Perhaps the most frequent cause of swarms leaving a hive is heat. An old colony will stick to its brood even if uncomfortably hot, but a swarm newly hived is likely to say, "Look here; we're not going to stand this. We'll get right out and run the chance of finding a cooler place." So off they go. When a swarm returns to the old hive, it may be because for some reason there is no queen with them. Keep your hives well shaded and cool, with abundant entrance for fresh air, and you've done the right thing to have swarms stay.

Hives, Sections and Queen-Cells.

1. What size hive will 1½ sections fit best with T tins?
2. Have you tried sections with separators with ½ cleats on each side? How will they work?
3. What size hive will 1½ sections fit the best, larger than the 8-frame, with section-holders?
4. Will bees tear down queen-cells without a queen or presence of laying-workers?

C. H. A.

ANSWERS.—1. Any size of section will fit any size of T super. That is one of the advantages of a T super. You can at any time change to a section of different width without changing your super.

2. Never tried them. I think some speak well of them.

3. If your frames are spaced 1½ from center to center, and you have the usual space for a dummy, your 8-frame hive will measure 12½ inside, and each frame added would add 1½ inches more. If your supers are the same width as your hives, you can have six holders over an 8-frame hive, and have plenty of room for a follower and wedge. Over a 9-frame hive you can have 7 holders, but it will be a pretty tight squeeze, and you can have no follower or wedge. Over a 10-frame hive you can have 7 holders with more room than is desirable for follower and wedge. Over an 11-frame hive you can have 8 holders with about the right space for follower and wedge. So if you want a hive larger than 8-frame, and want it for 1½ sections, the best thing will be an 11-frame hive.

4. Yes, indeed. Go to any hive and take away their queen and immediately give a queen-cell, and you'll probably have the pleasure of seeing them tear it down. After 24 hours, when they have become fully aware of their queenless condition, they will likely respect it. Still, they will sometimes take a notion to tear down any cell you give them, even after they have started queen-cells themselves.

Not All in the Kind of Hive.

I have several colonies of bees, and they are doing pretty well, with the exception of one which is the best I ever saw. I have taken three times as much surplus from it as from any other, all the same kind of bees. Is it on account of the hive, which is one of my own design? The style of hive is 8-frame, made for two supers of 24 sections each.

E. C. C.

Tarentum, Pa., Aug. 2.

ANSWER.—No hive has ever been gotten up by which three times as much honey can be obtained as in the average run of hives. It probably never will be gotten up. The fact is, that the difference in hives is more for the convenience of the bee-keeper than for the benefit of the bees. Every now and then something happens in the way of a heavy yield to make the beginner think he has a hive that will give extra returns. The testimony seems quite clear. The bees were all the same, they had the same treatment, and there was no difference in any respect except in the hive. It's hard to believe that the hive was not the cause of the difference in the yield. But the very next year the thing may be reversed. The hive that gave the big yield does not come up to the average. More than once I've had cases in which one hive gave five times as much as another. So far as could be seen, the bees were the same, no difference to be seen in any respect, and the hives were precisely the same. Of course there is a difference somewhere, but to tell what the difference is, has remained a puzzle among observing men for many years.

Yellow Drones.

In your reply to S. L. D., on page 457, you say that Italian drones are not yellow all over, and don't have distinct bands like the workers, but are inclined to a mottled appearance. Now, I am not a queen-breeder on an extensive scale, but I rear my own queens, and I think I can send you a queen that will produce drones that are yellow all over, and her bees are also good honey-gatherers, if there is any to gather, but they won't gather honey from prairie grass or hazel brush.

I had 16 colonies in the home yard this spring, and have increased to 34, by natural swarming, and have extracted 600 pounds of mint honey, and taken about 400 pounds of section honey, and there is that much on the hives yet, that is not quite finished, and the bees are now working on buck-bush with more vim than I remember to have ever seen before. I think they will finish those sections.

I send you by this mail a queen and a sample of what I call yellow drones. You can give this queen to Miss Wilson if you don't want it.

J. C. B.

Bronson, Kans., July 26.

ANSWER.—The bees you send are beauties—queen and all—and what you say about them I have no desire to contradict. Suppose some one should ask me, "How many bands have Italian workers?" I think I should answer, "Three;" and yet the workers you send have more. When we talk about Italians, I suppose the bees such as come from Italy are meant, unless 5-banded, or something of the kind, is specified. I have drones that are nearly a solid yellow, and yet they haven't the distinct bands to be found on the workers. Even the workers you send, although among the most yellow I ever saw, have not as distinctly marked bands as original Italians.

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Editorial Budget.

Home Again.—After spending a pleasant week visiting relatives and friends in Ohio, I am back again in the office (Aug. 17). It is the first real vacation I have had in four years. Any correspondents who feel that I have been negligent recently, will now know the cause of any delay in replying to their letters or orders. Next week I hope to tell a little about my trip, which included one day with The A. I. Root Co., at Medina, Ohio.

Hon. Eugene Secor, of Forest City, Iowa, has kindly sent me a picture of a part of his neat apiary. It is in a shady grove, and looks as cool and collected as Bro. Secor himself, whom the picture shows as standing by one of the hives, ready for work, or to give a talk on bees. Were it not for the fact that the picture is somewhat dim, it would be shown herewith. For successful half-tone engraving, photographs must be very clear and distinct.

President Holtermann, of the North American, and others, are expecting a very large attendance at the Toronto meeting, Sept. 4, 5 and 6. I truly hope it may be so. Gleanings for Aug. 1 has this editorial paragraph on the subject:

There is every indication that the meeting of the next North American at Toronto will be an unusually large one; indeed, we always have good conventions over in Canada. It is thought there will be 300 or over in attendance, and half this is a fairly good number for the North American. Let the attendance, enthusiasm, and good-will be big—yes, very big.

Yes, by all means, let the "good-will" part be a prominent feature. But I don't suppose our Canadian friends would tolerate anything else, especially in Toronto—that city so famous for its quietness, cleanliness and goodness. We must all remember to take with us our "best behavior."

Sowing Alsike Clover.—Mr. Golden's plea, on page 534, is indeed timely. There is no doubt that nearly every farmer in this country would sow Alsike clover if he were shown its great value as forage for stock, and as a honey-yielder. He would be glad to purchase the seed himself, as it enriches in three ways—makes good hay, yields fine honey, and greatly benefits the land upon which it grows.

Before another spring is here, I will try to think to give an article in the Bee Journal on Alsike clover growing, with illustration, all of which will be suitable for republishing in your local newspapers. Also, you could possibly induce your

farm papers to publish it. That would help immensely. I believe in using every possible agency to get proper and helpful information before the public. I think that occasional short articles on the use of honey should be furnished every local newspaper by bee-keepers. Take an interest in your home papers also, and then when you want their publishers to favor you by publishing an article on Alsike clover, or any other subject, they'll gladly do it.

Some Prominent Apiarian People are expected to be at the Toronto convention Sept. 4, 5 and 6. Among them may be named the following:

G. M. Doolittle, H. R. Boardman, A. I. Root, Capt. J. E. Hetherington, Treasurer J. T. Calvert, Hon. R. L. Taylor, Ernest R. Root, Vice-President L. D. Stilson, Thomas G. Newman, and others.

The Farmers' Advocate, published in Canada, says that "over 100 have already promised" to be present. It will be a good time to meet the Eastern members of the clan.

A special session of the Ontario Bee-Keepers' Association will be held in conjunction with the North American, so I understand. Better try to be there, if you can possibly do so.

Basswood and Drouth.—Mr. B. Taylor, of Forestville, Minn., has this to say about basswood, in the Aug. 1st number of the Farm, Stock and Home:

We, and many others in different States, reported and believed that the hard freezing late last spring had destroyed the basswood bloom. We now know we were mistaken, for many trees on the hills bloomed, and we have found several in bloom in low places where freezing was hardest. This proves that some other cause than frost curtailed the basswood bloom, which we now suspect to be the same that has nearly destroyed white clover in this section, viz.: the drouth of the last two years. The basswood trees have not the green, healthy, vigorous look of former seasons, and we know that many forest trees were at death's door last fall from lack of moisture. Truly, all things that have life are vitally interested in the sunshine and showers.

A Correction.—In the article by Mr. C. E. Mead, on page 488, in the ninth line from the bottom of the second column omit the word "not," and it will read as Mr. Mead wrote it, viz.: "I am as sure of wintering these small nuclei packed over the strong colonies as I am the big ones."

A Relic of the Battle of Antietam—a piece of a shell—has kindly been sent to me by Mr. L. A. Hammond, of Keedysville, Md., a bee-keeper whose farm is a part of the old battle-field. He says he can pick up any number of relics on that historic ground.

Ventura County, in California, has 4,215 colonies of bees, according to the assessors' reports. It would be interesting to know how much honey they stored this year.

Mineral Wool is something that has been suggested as good material for packing hives in winter. As probably quite a number do not know just what "mineral wool" is, and might be interested in it, I will give what the Age of Steel has to say in regard to it. It is an artificial product made from blast-furnace slag or certain melted rocks, by the action of a jet stream in which the liquid material is transformed into a fine fibrous or filamentous condition. In this state it closely resembles cotton-wool, hence its name. Among its most important properties are strength combined with lightness, resistance to transmission of heat, cold and sound. It is especially adapted as a lining between walls, floors, partitions, roofs, etc., in building construction, thus rendering a building to a greater degree fire-proof. In shutting out the rays of

sun in summer, the building is kept cool, while in winter the hot ascending air is retained, keeping the building warm. By deadening sound all communications and noises between offices are avoided.

As an inorganic substance, it does not decay or breed and harbor insects or vermin, as do earth, mortar, felt and sheathing papers when used as linings, a good property from a sanitary standpoint. It is especially adapted to cold storage and refrigerating houses, and has also been applied as a cover for water-pipes to prevent them from freezing. A more extended use of mineral wool seems very probable.

It might pay to test it more extensively for packing bees in winter. Possibly it could be used in place of straw by those who make straw hives.

The Nectar in Flowers, says W. W. Stoddard, of England, is simply a solution of cane-sugar formed and provided for the nutrition of the stamens and pistils. That may be only his "say so."

Among the Bee-Papers

Gleaned by Dr. Miller.

WEIGHT OF BEES.

According to figures in Gleanings, it seems pretty well established that when well filled, as when leaving with a swarm, bees weigh about 3,000 to the pound, and when emptied of honey about 5,000 to the pound. That shows that a bee can carry a load of honey equal to about two-thirds its own weight.

KEEPING SHARP THE UNCAPPING-KNIFE.

Here's how E. H. Schaeffle does it, as reported in Gleanings:

"He uses hot water, as many others do, into which to dip his knife. The water is used in a two-gallon stone crock. If the water is put in boiling hot, the crock will hold the heat for a long time. Select a crock upon the edges of which there is no enamel. If there is, file it off. Now, when the knife is removed from the crock, draw it across the edge of the crock as you would across a whet-stone, and the edge of the knife is kept as keen as a razor, which is no small item in uncapping."

ITALIANIZING AN APIARY.

Doolittle, after trying other plans, thinks that for the practical bee-keeper "the best plan is to give all the colonies which have good Italian queens, one or two frames of drone-comb, so that large numbers of drones will be reared in your own apiary, which will be very likely to secure the pure mating of one-half or more of your queens; and when one is found that is impurely mated, kill her and give the colony a queen-cell from your pure breeder, and try again. As your colonies increase, your drones will increase also; and the more drones reared in your Italian colonies, the better will be your chances of having all purely mated."

AMALGAMATION OF THE NORTH AMERICAN AND THE UNION.

The editor of Gleanings says:

"I must say, that, after looking over the whole situation, and studying it in all its bearings, I am in for supporting the amalgamation. I can't see how the workings of the Union would be hampered by being a part of the N. A. B. K. A., and the two organizations in one could be run much more economically.

"The truth of the the matter, it seems to me, lies right here: Bee-keepers cannot really afford two such organizations. Let the Union swallow up the North American, if need be; but let us boil them down into one; then let us have smaller initiation fees, conduct the one more economically, and run the membership up into the several hundreds.

"If I am not very much out of the way, the increased membership of the Union very recently was due to the fact that bee-keepers thought, after the Constitution was changed

to take cognizance of adulteration and other matters, the Union would do something with this great problem of adulteration, and hence the new members. I do not quite agree that all the funds of the Union were raised for defense. The recent addition to membership brought with it an addition to the funds, and this was not so much for defense as for other matters.

"If we expect large membership, and a power for good, so that, as Bro. York says, we may appeal to legislatures that will hear, it is my humble opinion that the Union should branch out in its line of work. The field of protection against unjust legislation is too narrow. The Union ought to take hold and investigate every case of alleged adulteration. It has seemed disinclined to take any such action. Again, it should, I think, keep a careful watch of the markets and of commission men. It should also have a watch-dog eye on swindlers who do occasionally creep into our ranks, and have in the past succeeded in carrying off hard-earned dollars from bee-keepers. I am not referring to adulterators, but to unscrupulous queen-breeders and supply-dealers—more especially the former, who have taken in large orders and then pocketed the money.

"Last, but by no means least, it should and could fill the mission of the North American, in getting together the leading bee-keepers of the land for face-to-face and hand-to-hand conferences. It should grapple the great questions, and then with a large membership and a financial backing, be in a position to act and do something. The North American is not, and has not been, what it should be. The Union has had a brilliant past in the line of protection against unjust legislation. The need of such work is largely gone by, but there are newer and larger fields for action, and why not combine our two forces into one powerful one? Gleanings is for amalgamation, and, with the Review, it doesn't care whether the N. A. B. K. A. swallows the Union, or whether the swallowing is the other way. Let's combine our forces."

WHEN TO PUT ON THE ESCAPE.

C. R. Coe says in Gleanings that instead of putting on the escape at night, the proper time is early in the morning of the day the extracting is to be done. This gives the bees a chance to evaporate through the previous night the thin nectar present.

REARING QUEEN-CELLS THE OLD WAY.

For the first time in several years we have been enabled to fill almost all our orders for queens, from our own apiary. Our trade has not been less; but now that we have gone back to the good old-fashioned method of rearing queens, it is an actual fact that we can rear more queens than we could by fussing with the new-fangled plans.—Gleanings.

CRIMSON CLOVER.

A. I. Root says they are now selling crimson clover seed at the rate of a bushel or more a day. He further says:

There has been sufficient success, not only in Ohio, but even as far north as Michigan and York State, to warrant us in taking considerable pains to learn how to handle it. If it succeeds, you have a great lot of feed very early in the spring; and if you wish to enrich the ground for some future crop you have a great growth of clover to turn under. When it succeeds, this latter plan is probably the cheapest way of manuring your ground that has ever been devised. I say manuring, for a heavy growth of this clover, or, in fact, any clover, turned under just before planting your crop, is equivalent to a great many loads of the very best stable manure. Another thing, you do not get a great lot of weed seeds as where your manure is purchased.

The Palmer House, located at the corner of King and York streets, Toronto, will be the headquarters of the North American convention Sept. 4, 5 and 6. Mr. J. C. Palmer, the proprietor, writes me that he has made arrangements to accommodate 200 delegates. So you see there will be ample room for all. Where members "double up"—two in a bed—only \$1.50 a day will be charged; \$1.75 if you prefer to "bunk" alone.

Just across the street from the Palmer, is the Kensington, another hotel owned by Mr. Palmer. Here the rate is 50 cents and up for rooms, and meals are furnished on the European plan—pay for what you order.

Southern Department.

CONDUCTED BY

DR. J. P. H. BROWN, AUGUSTA, GA.

[Please send all questions relating to bee-keeping in the South direct to Dr. Brown, and he will answer in this department.—ED.]

Cutting Out Drone-Comb—Preventing Robbing.

DR. BROWN:—In replying to J. J. W.'s question (When a queen-excluder is used, and brood-frames in the upper story, would you cut out all the drone-comb?) you say: "I would cut it out."

1. The answer is not explicit, or why would you cut it out of the upper story? That is, would you cut it out of the upper story?

2. How would you prevent robbing?
Evans, Ky.

P. A.

ANSWERS.—1. It is not *absolutely* necessary to cut it out, but in order to secure the best results, and to conduct apilary work to the best advantage, it is wise and best not only to have frames of the same size, so as to be interchangeable, but to have them filled with straight *worker*-comb. When discussing the natural history of the drone-bee, a few apilrists have ascribed to it several minor functions, aside from that of fertilization of the queen, but this latter is unquestionably the object of its being. God did not endow it with the desire nor capacity to work as a gatherer in the fields. It is a consumer, and a greedy one, of the proceeds of the industrious little worker. A hive with two or three frames of select drones will be sufficient to furnish all the males for a large apilary. More than this is a waste of honey, labor and time.

2. If there is any truth in the old adage, that "an ounce of prevention is worth a pound of cure," the full force of it comes in when applied to this question. When bees are gathering plenty of honey they seldom show any desire to rob; but when forage is scarce they can, by a very little imprudence, or want of care on the part of their keeper, imbibe in this vice, and give no end to trouble. At such seasons, to be on the safe side, only open hives late in the evening, and always cover the exposed frames with a cloth, and keep the hive open no longer than necessary. Avoid the exposure of all bits of comb and honey—of all sweets that will attract the bees. If feeding is necessary, do it after sundown, and place the feed inside the hive. It is not always the poorest colony robbing the richer one, but more frequently it is the strong colonies robbing the weaker ones.

Robber bees can always be distinguished from those that have been out honestly foraging, by the peculiar manner in which they approach a hive. Like sneak-thieves, they go cautiously with their heads toward the hive, looking for a hole to enter. They will alight at the entrance, and then dart back as if afraid to enter, particularly if there are guards stationed there. But if the entrance is not securely guarded, they will finally pass in, and when once loaded with stolen honey, they will pass out and make for their own honey. The bees belonging to the hive would come in loaded and *not* go out loaded.

The colony attacked at first may show some resistance, but as the number of robber-bees increase, they give up, and frequently join the robber force to the destruction of the colony. You cannot well arrest the evil until you know the hive from which the robbers come. Such bees are out early in the morning before their honest neighbors stir, and are at work in the evening after their neighbors are quietly at home. To be certain, sprinkle some flour on the bees passing out of the attacked hive, and have assistants to watch the entrance of the suspected hives, and the white-coated thieves can be seen entering their hives. When you have found them, smoke them thoroughly in order to alarm them, and to check, for the

time being, their outside operations, and to impart to them the odor of smoke, which will be distasteful to the inmates of the attacked hive. Contract the entrance to the robber hive so that only one bee can pass at a time, and set up weeds, grass, small brush, or boards, in front to obstruct the passage-way. Robber bees dislike winding entrance-ways. Tap a little now and then on the hive to anger the bees, and to get them into fighting trim; but sometimes they become so discouraged that they lose all desire to defend their home. They nearly always become thus when the robbers have taken all their stores. The only remedy in such cases is to close up the entrances to the weak hive with wire-cloth, and carry it into a cool, dark room, like a cellar; feed; allow it to remain 48 hours, and then remove it to a new stand, taking the precaution to protect the entrance as previously directed. If the hive is still robbed, you had better unite the bees with the dishonest colony.

In cases where the robbers would attack in force, I have found it of great advantage to spray them well with a fountain pump. Kerosene, creosote, carbolic acid, etc., sprinkled about the entrance and hives of robbers will often result in checking their depredations. The object of these preparations is to give them a disagreeable scent, and to make them obnoxious to good, honest bees.

Bee-Talk for Beginners—Honey.

Honey is a sweet substance secreted by the nectaries of flowers. It is also secreted in small quantities by little glandular organs on certain plants, as the cow-pea. It is taken up by the proboscis of the bee, and deposited in a special pouch called the honey-sac, and conveyed to the hive. It is possible that the insect imparts to it some little acid; but honey is not *digested* nectar, as some writers contend. The function of the honey-sac is only that of a receptacle, and not an organ of digestion. The odor, flavor, and qualities of it depend upon the source from which it is gathered. Thus the famous honey of Hymettus has its thyme odor and flavor; the horsemint honey has its distinguishing qualities; the honey of the heather has its peculiarities; the sage, the poplar, the basswood, the clover, etc., have all their characteristics. When selecting honey for medicinal purposes, it might be well to consider the properties of the plant from which it is gathered.

When natural forage is scarce, bees will gather sweets from many sources. They will collect the excretion of the aphids, the waste of cider-mills, cane-mills, melon-juice, fruit-juice, and the refuse of molasses and sugar barrels, etc. But none of such stuff can truly be called honey. Bee-keepers have been charged with feeding their bees glucose, sugar, etc., for the object of the insects storing it in the surplus department to be sold for genuine honey. But such charges cannot well be sustained. In fact, for a bee-keeper to purchase glucose, etc., to feed to his bees with the expectation of their depositing it as surplus honey to be sold at the price of the pure article, would be to incur a loss in dollars and cents. This has repeatedly been tried.

In some seasons, when honey is scarce in the flowers, bees will work on fruit; but it is only when put to great straits for food that they will attack sound fruit. When the skin of grapes, peaches, figs, etc., become punctured, or cut by wasps, yellow jackets, birds, etc., they will proceed to suck the juice. But as all such cracked fruit is unsalable, they do comparatively little harm. Here it should be remembered that the bee is the friend of the agriculturist, for if it were not for these insects, the fertilizing element of many male flowers would fail to reach the pistils of the female, and consequently the plant would produce neither seeds nor fruit.

See "Bee-Keeper's Guide" offer on page 545.

Notes AND Comments.

CONDUCTED BY

Rev. Emerson T. Abbott, St. Joseph, Mo.

Strawberry Pollination.—"Can you raise a crop of Crescent strawberries with no staminate blossoms within a mile?"—Dr. Miller, on page 454.

Say, Doctor, I will let you and Mr. Jolley settle your strawberry disputes, but I want to suggest that it is a little dangerous to tackle these botanical questions unless you are keeping yourself well read up on the subject. It is not absolutely necessary that fertilization shall take place in order that fruit may be produced, and you were peculiarly unfortunate in mentioning the "Crescent," as you will see by the following:

"Certain so-called pistillate varieties—notably the Crescent—at times mature fruit and apparently perfect seeds in the absence of any perfect flowering variety."—Prof. W. M. Munson, of the Maine Experiment Station.

This may seem startling, but he says further: "One grower of my acquaintance uses no perfect-flowering variety, and succeeds admirably."

Not only strawberries, but pears and other fruit are produced without fertilization. Often pollination takes place without the ovules being impregnated. Pollination seems to act in two ways—in one case it impregnates the ovules, and in the other it acts directly on the fruit, stimulating its growth. The latter frequently occurs without having any effect on the ovules. Hence, such fruit as strawberries and pears may seem to be perfectly developed, but the seed—the real fruit in the strawberry—will be imperfect.

Special Agent Waite demonstrated by a series of experiments that in all cases where the ovules of the pear were not impregnated, the fruit, though seemingly perfect, was not as large and as well developed as it was where the act of impregnation had taken place. The facts stated above should not be lost sight of in the discussion of this subject. Let me quote further from Prof. Munson, as confirming my position:

"The fact seems well established that in certain species the ovary may develop and reach normal size without the corresponding impregnation of the ovules, and even in the entire absence of the male element. What the conditions are which induce this apparently abnormal condition, is not fully determined. It is evident, however, that vigorous growth of the parent plant is of first importance."

I want to call special attention to a statement of Prof. M.'s in the first quotation. You will notice that he says, "and apparently perfect seeds." I am glad that he said "apparently," for I am pretty thoroughly convinced that no seed will be produced, if the act of impregnation does not take place.

I feel quite sure that there is yet much to learn about the influence of pollen in the development of fruit. I have said more than once that it is not a question of the mere production of fruit, but a question of perfect fruit—perfect fruit not only for one year, but for all time to come. It may prove to be true that lack of perfect impregnation for a long series of years will cause the plant to degenerate. In that case it is not a question of one crop, but of the best possible crop for years. This fact makes all that I have said on the subject harmonize with the above—not fruit alone, but PERFECT fruit for all time to come is the mission of the bees in orchard and berry-patch.

The IceVoy Foul Brood Treatment is given in Dr. Howard's pamphlet on "Foul Brood; Its Natural History and Rational Treatment." It is the latest publication on the subject, and should be in the hands of every bee-keeper. Price, 25 cents; or clubbed with the Bee Journal for one year—both for \$1.10.

The North American at Toronto.—Although all the program for the meeting of the North American Bee-Keepers' Association at Toronto is not quite ready to announce, Secretary Hutchinson has sent me the following in regard to transportation and hotel arrangements for those attending the convention at Toronto, Sept. 4, 5, and 6:

The North American will hold its annual convention in the auditorium of the Normal School, at Toronto, Ont., Canada, on Sept. 4, 5, and 6, the first session being on the evening of the 4th.

The Trunk Line Association and the Central Traffic Association have both given reduced rates—a fare and one-third. Persons going will buy a ticket paying full fare going, and get a Certificate from their station agent. If a ticket Certificate cannot be obtained because your starting-point is a small place, then buy a ticket to the nearest large town where a Certificate may be obtained. It might be well to inquire of the agent a few days beforehand, and thus learn if he has any Certificates, and the point where one can be obtained if he has none.

If 100 persons are present who have come on some legitimate form of railroad transportation, all who have Certificates, and have paid as much as 75 cents fare going, will be sold tickets for the return trip at one-third fare. In Canada and Michigan, and in other States, perhaps (but of this I do not know), round trip ticket can be bought for but a single fare. This, of course, will be better than the certificate plan. Perhaps many living a short distance beyond where excursion rates are given, will find it cheaper to buy a regular ticket to the nearest point where excursion rates prevail, but those coming long distances will probably find the Certificate plan the best. Each one must look up these matters in advance and decide for himself which is the best for him.

The Trunk Line Association covers the roads from Niagara Falls, Buffalo, Salamanca, N. Y., Pittsburg, Pa., Bellaire, Ohio, Weeling, Parkersburg, and Charleston, W. Va., and points east thereof except New England. I hope to get reductions from New England. The Central Traffic Association covers the territory west of Buffalo and Pittsburg to Chicago, and St. Louis on the west, and the Ohio river on the south.

Tickets must be bought not earlier than three days previous to the meeting, and return tickets bought not later than three days after the meeting.

The headquarters at Toronto will probably be at the Palmer House, corner of King and York streets. This is \$2.00 a day house, but if members will double up, two in a bed, the price will be only \$1.50 a day. If separate beds are wanted, it will be \$1.75. Remember this is during the Industrial Fair, when no reductions at all ought to be expected. The street cars pass the hotel, and they can be taken within a block of the Normal School, where the convention is to be held.

While the program is not yet complete, the following can be announced:

Thomas G. Newman, Chicago, Ill.—The Bee-Keepers' Union: Its Past, Present, and Future.

Dr. C. C. Miller, Marengo, Ill.—Amalgamation of the North American Bee-Keepers' Association and the Bee-Keepers' Union.

Hon. John Dryden, Minister of Agriculture, Toronto, Canada—Address of Welcome, Etc.

A short address by Jas. Mills, M.A., L.L.D., President of the Ontario Agricultural College, Guelph, Canada.

S. T. Pettit, Belmont, Ont.—Introducing Queens.

Ernest R. Root, Medina, Ohio—Bee-Paralysis: What We Know and Should Do About It.

Allen Pringle, Selby, Ont.—Mistakes of Bee-Papers and Bee-Journals.

H. R. Boardman, East Townsend, Ohio—How to Feed Bees Profitably.

Hon. R. L. Taylor, Lapeer, Mich.—How Bee-Keepers Might Receive More Benefit from the Experiment Stations.

F. A. Gemmill, Stratford, Ont.—Who Shall Winter Bees Out-of-Doors; Who in the Cellar?

Dr. J. P. H. Brown, Augusta, Ga.—What is Indicated by Color in Italian Bees?

James Heddon, Dowagiac, Mich.—The Proper Size of a Brood-Nest, and How It Shall be Decided.

B. Taylor, Forestville, Minn.—The Surest and Best Way of Producing a Crop of Comb Honey.

G. M. Duellittle, Borodino, N. Y.—Some Things of Interest to Bee-Keepers.

R. McKnight, Owen Sound, Ont.—Legislation for Bee-Keepers.

Flint, Mich.

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Langstroth on the Honey-Bee, revised by Dadant.—This classic in bee-culture, has been entirely re-written, and is fully illustrated. It treats of everything relating to bees and bee-keeping. No apiarian library is complete without this standard work by Rev. L. L. Langstroth—the Father of American Bee-Culture. It has 520 pages; bound in cloth. Price, \$1.40.

Bee-Keepers' Guide, or Manual of the Apiary, by Prof. A. J. Cook, of the Michigan Agricultural College.—This book is not only instructive and helpful as a guide in bee-keeping, but is interesting and thoroughly practical and scientific. It contains a full delineation of the anatomy and physiology of bees. 400 pages; bound in cloth and fully illustrated. Price,

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—A method by which the very best of Queen-Bees are reared in perfect accord with Nature's way. 115 pages, bound in cloth, and illustrated. Price, \$1.00.

A B C of Bee-Culture, by A. I. Root.—A cyclopedia of 400 pages, describing everything pertaining to the care of the honey-bees. It contains 300 engravings. It was written especially for beginners. Bound in cloth. Price, \$1.25.

Advanced Bee-Culture, Its Methods and Management, by W. Z. Hutchinson.—The author of this work is too well known to need further description of his book. He is a practical and entertaining writer. You should read his book. 90 pages, bound in paper, and illustrated. Price, 50 cts.

Rational Bee-Keeping, by Dr. John Dzierzon.—This is a translation of his latest German book on bee-culture. It has 350 pages; bound in cloth, \$1.25; in paper covers, \$1.00.

Bienen-Kultur, by Thomas G. Newman.—This is a German translation of the principal portion of the book called **Bees and Honey**. 160 page pamphlet. Price, 40 cents.

Convention Hand-Book, for Bee-Keepers. Thomas G. Newman.—It contains the parliamentary law and rules of order for Bee-Conventions—also Constitution and By-Laws, with subjects for discussion, etc. Cloth, gold-lettered. Price, 25 cts.

Amerikanische Bienenzucht, by Hans Buschbauer.—Printed in German. A hand-book on bee-keeping, giving the methods in use by the best American and German apiarists. Illustrated; 138 pages. Price, \$1.00.

Thirty Years Among the Bees, by Henry Alley.—Gives the results of over a quarter-century's experience in rearing queen-bees. Very latest work of the kind. Nearly 100 pages. Price, 50c.

Dr. Howard's Book on Foul Brood.—Gives the McEvoy Treatment and reviews the experiments of others. Price, 25 cts.

Foul Brood Treatment, by Prof. F. R. Cheshire.—Its Cause and Prevention. Price, 10 cts.

Foul Brood, by A. R. Kohnke.—Origin, Development and Cure. Price, 25 cts.

Honey as Food and Medicine, by T. G. Newman.—A 32-page pamphlet: just the thing to create a demand for honey at home. Should be scattered freely. Contains recipes for Honey-Cakes, Cookies, puddings, Foams, Wines, and uses of honey for medicine. Prices, prepaid—Single copy, 5 cts.; 10 copies, 35 cts.; 50 for \$1.50; 100 for \$2.50; 250 for \$5.50; 500 for \$10.00; or 1000 for \$15.00.

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Swarming, Dividing and Feeding.—Hints to beginners in apiculture. A chapter from **BEEs AND HONEY**. Price, 5 cents.

Bees in Winter, Chaff-Packing, Bee Houses and Cellars. This is a chapter from **BEEs AND HONEY**. Price, 5 cents.

The Hive I Use, by G. M. Doolittle. It details his management of bees, and methods of producing comb honey. Price, 5 cents.

Commercial Calculator, by C. Ropp.—A ready Calculator, Business Arithmetic and Account-Book combined in one. Every farmer and business man should have it. No. 1, bound in water proof leatherette, calf finish. Price, 40 cts. No. 2 in fine artificial leather, with pocket, silicate slate, and account-book. Price, 60 cts.

Green's Six Books on Fruit-Culture, by Chas. A. Green.—Devoted 1st, to Apple and Pear Culture; 2nd, Plum and Cherry Culture; 3rd, Raspberry and Strawberry Culture; 4th, Grape Culture; 5th, Strawberry Culture. 129 pp.; illustrated. 25 cts.

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Caponizing and Caponizing, by Dr. Sawyer. Fanny Field, and others.—Illustrated. All about caponizing fowls, and thus how to make the most money in poultry-raising. 64 pages. Price, 30 cts.

How to Propagate and Grow Fruit, by Chas. A. Green.—Brief instructions in budding, grafting and layering; also propagation of fruit trees, vines and plants. 72 pages. Price 25 cts.

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Poultry for Market and Poultry for Profit, by Fanny Field.—Tells everything about the Poultry Business. 64 pages. Price, 25 cts.

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The following clubbing prices include the American Bee Journal one year with each book named. Remember, that only ONE book can be taken in each case with the Bee Journal a year at the prices named. If more books are wanted see postpaid prices given with the description of the books on this page. Following is the clubbing-list:

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General Items.

Fair Prospects for Fall Honey.

The July rains have brought forth vegetation in the greatest luxuriance, and there is fair prospects for a fall flow of honey.

Bees commenced swarming Aug. 1, and are continuing at a lively rate.

MRS. L. HARRISON.

Peoria, Ill., Aug. 2.

Bee-Sting Antidote.

The article on page 430, "A Consideration of Bee-Stings," is pretty good, but the sting of bees hurts me, and especially if I haven't my preventive close at hand, viz.: Make a strong tincture of lobelia seed. The minute a bee stings me, I apply a little of the tincture on the place stung. It destroys the poison, no swelling results, and the pain generally amounts to nothing. This is a positive safe-guard against the bad effects of being stung.

Ed. S. POPE.

Indianapolis, Ind.

Blue Vervain.

I send a flower that I wish to know the name of. It is a good honey-plant, and blooms about July 25. It is just swarming with bees to-day (Aug. 5). I intend to keep watch of it, and see when it ceases to bloom.

Luce, Mich., Aug. 5. WM. CRAIG.

[This plant is the blue vervain (*Verbena hastata*) usually very common in waste-places and in neglected pastures. It is often accredited as a good honey-plant.—T. J. BURRILL.]

Bees in a House-Apiary.

I have 30 colonies of bees in a building built after the plan of H. P. Langdon's, of New York. I use the Langstroth frame, and the bees are doing extremely well. After-swarming need not occur at all in such a building.

Later I may give my experience and results with bees kept out-doors and those kept inside.

S. E. ROOD.

Fertile, Iowa, July 31.

[Mr. Rood is hereby requested to tell his experience as indicated above, for the benefit of the Bee Journal readers.—Ed.]

Starting in Bee-Keeping—Uniting.

In the summer of 1893 I caught a swarm of bees and put them into an 8-frame hive, and I now have 12 strong colonies. I have never had any bee-book, nor taken a paper; in fact, I have never seen a bee-paper that was worth reading until I had a copy of the American Bee Journal handed me. I have found experience a great teacher, and as my stock cost me comparatively nothing, I have experimented quite a little.

I would like to tell how I united two weak colonies at a good advantage. About June 1 I had a colony that had swarmed three times, and although weak, it had a good laying queen. This colony I will call No. 1. The colony in the hive next to it (about 5 feet away) had swarmed, and although the queen had failed to return from her bridal

tour, the colony was fairly strong; this I will call No. 2.

I knew that one strong colony was worth two weak ones, but how to unite them was a question with me. I moved hive No. 1 to within one foot of hive No. 2. I then moved No. 2 away about 20 feet, and taking each frame I shook and brushed all the bees off on the alighting-board of No. 1; they readily entered (by giving a little smoke), also the returning bees from both hives, that were in the field. Before I had finished the job, a large swarm issued from another hive, and clustered on a brush near by. I at once hived them in No. 2, all filled with brood-combs, and the result is two strong colonies filling surplus sections with white clover honey, which is found here in abundance.

J. E. TAYLOR.

Orleans, Mass., July 22.

Old Subscriber—Doing Fairly Well.

I have been taking the American Bee Journal since Geo. Wagner edited it in Washington, D. C., and I have ever found, and still find, it full of interest to bee-keepers. There are many things in every issue that are helpful and full of suggestions to me.

The bees in this part of the country are doing fairly well this year.

Liberty, Ind., Aug. 3. JOHN CLARK.

Too Much Rain.

The season this way has been a hard one—too much rain. It started in well, but cold rains, long continued, spoiled it. I think the fall flowers will build up well for winter.

I have experimented a little in queens for my own pleasure this season, and have learned one or two things that may be of advantage.

J. E. POND.

North Attleboro, Mass., Aug. 6.

Battle of the Humble-Bee.

A short time ago as I was watching my honey-bees carry into their hives pollen and honey, a large humble-bee, attracted by the fragrant smell of new honey, came buzzing around the hives; it buzzed from entrance to entrance of different hives, but as each was well guarded by the honey-bees, they would dart at it whenever it attempted to alight. It was loth, apparently, to make the attempt. However, the smell of the gathered sweets was too much for it, and its appetite got the better of its fears, and it alighted at the entrance of one of the hives. No sooner done than two bees were on its back and wings—one on each side; and as it raised to throw them off, a third bee attacked it squarely in the breast, and over all went to the ground.

I watched the struggle as they fought, the bees hanging onto it and thrusting their stings into it the best they could, while it, with comparatively giant strength, tore them away. The contest lasted perhaps one quarter of a minute, when it cleared itself from the honey-bees, leaving the three adversaries exhausted and wounded on the ground; it flew perhaps six feet and rested on a stone. I watched it as it

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This famous strain of Yellow-Banded Bees are giving satisfaction where they have been introduced. I have had this strain in my apiary six years, and never have had a swarm of bees from them. And in the particular colony from which I am rearing Queens, I have never received a sting. Every subscriber to the *American Bee Journal* can obtain one WARRANTED QUEEN by remitting 75 cts. Or \$1.50 pays for the above bee paper and one of the finest "Adel" Queens.

TESTIMONIAL.

WILLOW GROVE, Del., July 16, 1895.
MR. H. ALLEY: The best queen I have come from you. The colony has stored 114 pounds comb honey from fruit bloom and crimson clover. White clover is a complete failure.
J. COLBY SMITH.

HENRY ALLEY,

WENHAM, MASS.
34Atf Mention the American Bee Journal.

THROAT

AND LUNG DISEASES,
DR. PEIRO, Specialist
Offices: 1019, 100 State St.,
CHICAGO. Hours 9 to 4.

ITALIAN QUEENS

Untested, July to Oct., 75c. each—3 for \$2.00.

Tested Queens, \$1.00 each.
By return mail. Satisfaction Guaranteed
Send for Free Illustrated Circular to

THEODORE BENDER,

28Atf 18 Fulton St., CANTON, OHIO.
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Promptness Is What Counts!

Honey-Jars, Shipping-Cases, and everything that bee-keepers use. Root's Goods at Root's Prices, and the best shipping point in the country. Dealer in Honey and Beeswax. Catalogue Free.

Walter S. Pouder
162 N. Ave.,
INDIANAPOLIS, IND.

Mention the American Bee Journal.

H. G. Acklin, 1024 Mississippi St.
St. Paul, Minn.
Northwestern Agent For

The A. I. Root Co.'s Apiarian Supplies

Send for 1 BEES AND QUEENS
Price-List 1 For Sale.

21A17 Mention the American Bee Journal.

TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on 1-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc.

PAGE & LYON MFG. CO.

NEW LONDON, WIS
Mention the American Bee Journal.

ITALIAN BEES AND QUEENS.

Queens, 75 cents, or two for \$1.00.

Mrs. A. A. SIMPSON,

29A8t SWARTS, Greene Co., PA.
Mention the American Bee Journal.

1895 SAVE MONEY 1895

If you want first-class ITALIAN QUEENS FOR BUSINESS, Foundation at Wholesale Prices, Hives, suited for the South, or SUPPLIES, send for Price-List—to

J. P. H. BROWN, AUGUSTA, GA.

Mention the American Bee Journal.

panted and dressed its wounds and wings. It rested for a minute or two, and started to fly, then rested again. Maddened as it was by its defeat, it started again and went direct to the entrance of the hive. It tried to enter without stopping, but its reception was very warm and pointed! It was attacked from all sides at once, and they all rolled to the ground in a bunch. The struggle lasted two or three seconds, when the humble-bee tore the bees from it (like the giant it was), and took its departure at once, a wiser if not a more humble humble-bee.

J. L. BOWDISH.

Wichita, Kans., July 29.

Carniolan-Italian Hybrids, Etc.

I have tested the blacks, Italians, Piques, Italian and black hybrids, the Carniolaus, and Carniolan Italian hybrids. The last are the bees for me. It is true they are quite given to swarming, but they are hardy, winter well, are gentle, good comb-builders, build up early in the spring, and will go to work in sections when the Italians will lay up and try to steal what the others gather.

I am thinking of trying a few 9 or 10 frame hives, if 1½ sections will work to suit. I think it will check swarming a little, although they are not bad, but from choice I prefer they would not swarm at all.

My bees stored an average of 63 complete 14-ounce sections of honey per colony, 14 ounces each, spring count, and doubled in increase. I lost 6 per cent. in wintering last winter, but they all came out weak in the spring. What I lost died from the effects of dysentery; they were all affected.

Allen, Mich., July 12. C. H. AUSTIN.

Phacelia.

I send you by mail a package containing specimens of a plant in the different stages of its growth, and wish to know what it is, and what it is good for. It is a plant that came up from a paper of mixed seeds, and I do not know any name for it. I call it "the bee-plant," because the bees work on it so constantly. I planted it a year ago last spring with other seed, and one plant of that kind came up, and from the time it commenced to blossom until the frost killed it, the bees worked busily on it. I sowed the seed, and this year have a bed of it about equal to 10 feet square, and the bees are almost eating it up.

H. P. WILLSON.

Bathgate, N. Dak., July 29.

[This plant is *Phacelia congesta*, often known simply as phacelia. It has often been commended as a honey-plant, and seems to merit its good reputation. It originally came from Texas.—T. J. BURL.]

Fatal Effect of a Bee-Sting.

Do you know that bee-stings sometimes prove fatal? I never thought so, but I was informed by a reliable man, a few days ago, of the case of Harry Ayers, who died from the effects of the sting of a single bee, and in the remarkably short time of five minutes. As I thought the case a rather peculiar one, I took the names and address of the physicians that examined the man soon after he died. They were Drs. Cole-

QUEENS!

Now ready by return mail, reared in full colonies from the best honey-gathering strains in America, at the following very low prices:

Tested	per ¼ dozen	each	\$1.50
Warranted	purely-mated	each	.75
"	per ¼ dozen	each	4.25
"	per dozen	each	8.00

If you want Queens for business, get my old reliable strain. 40 p. descriptive Catalog Free.
W. W. CARY, Colrain, Mass.
27Atf Mention the American Bee Journal.



THE OLD RELIABLE

PEERLESS FEED GRINDERS

Grinds more grain to any degree of fineness than any other mill. Grinds corn, oats, etc., fine enough for any purpose. Warranted not to choke. We warrant the Peerless to be THE BEST AND CHEAPEST MILL ON EARTH. Write us at once for prices and agency. There is money in this mill. Made only by the JOLIET STROWBRIDGE CO., JOLIET, ILL. Jobbers and Manufacturers of Farm Machinery, Carriages, Wagons, Windmills, Bicycles, Harness, etc. Prices lowest. Quality best.

Mention the American Bee Journal. 34A26

Select Tested Italian Queens

Friends, I will have 200 Select Tested Queens for sale Sept. 1 at \$1.00 each or \$10.00 per dozen. Untested, 50 cents each, or \$5.00 per dozen. Tested Queens 75 cents each, or \$6.00 per dozen. Other Golden Italians or Imported stock at same price. Safe arrival and satisfaction guaranteed. Address:

F. A. CROWELL,

31Atf GRANGER, MINN.
Mention the American Bee Journal.

Woodcliff Queens.

I will send a Guaranteed 5-Banded Yellow Queen, bred from a Breeder selected from 1000 Queens (some producing over 400 lbs. of honey to the colony); or a 3-Banded Italian Leather-Colored Queen direct from a Breeder imported from Italy, Oct. '94—at 75c., and a special low price for a quantity.

My secret is to sell an extra-large amount, which enables me to sell at low prices. Will run this spring 350 Nuclei—have 1 home and 4 out apiaries. No Queens superior to my strain.

Send for Descriptive Catalogue and Testimonials to

WM. A. SELSER, WYNCOTE, PA.

COMB FOUNDATION.

Wholesale and Retail.

Quality always the best. Price always lowest. Working Wax into Foundation by the lb. a Specialty. I can make it an object for you in any quantity, but offer special inducements on straight 25 or 50 lb. lots. Or for making large lot of Wax into Foundation, I am furnishing large dealers, and can also please you. Beeswax taken at all times. Write for Samples and Prices, to

GUS DITTMER, AUGUSTA, WIS.

Reference—Augusta Bank. 16Atf

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THROAT

AND LUNG DISEASES,
DR. PEIRO, Specialist
Offices: 1019, 100 State St.,
CHICAGO. Hours 9 to 4.

Queens and Nuclei!

Untested Italian Queens, by return mail, 75c; Tested, \$1.00; Select Tested, \$1.50. Nuclei, by express—per Frame, 75c. Address, C. E. MEAD, 87 Artesian Ave., Station D, CHICAGO, ILL.

Convention Notices.

KANSAS.—There will be a meeting of the Southern Kansas Bee-Keepers' Association in Fort Scott, Kans., on Sept. 19, 1895. All are cordially invited to come and have a good time. There will be a full program.
J. C. BALCH, Sec.
Brunson, Kans.

WISCONSIN.—The Southwestern Wisconsin Bee-Keepers' Association will hold its next meeting at Platteville, Wis., Oct. 8 and 9, 1895. "Come, every one." Don't get discouraged if we haven't got a crop of honey. We will have a good time at Platteville. Just the same. Bring your wives and daughters with you. Many interesting subjects will be discussed.
M. M. RICE, Sec.
Boonville, Wis.

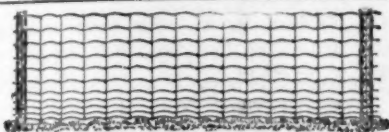
LAST CALL!

Golden Italian Queens.

August and September, 60 cts.; Oct., 75c.

J. F. MICHAEL, Greenville, Ohio.

34A16 Mention the American Bee Journal.



Another Wonderful Cure.

Ever since my "calhood" I had been in trouble, inherited a tendency to "breaking out." After a severe attack I have often been confined to the stable for weeks. Also troubled with a raging sensation in my nose, and a feeling as if stuck with pinchforks by angry men. I was threatened with "Bologna treatment," but a friend recommended **ELI-SOL** as compounded by the Page Woven Wire Fence Co., Adrian, Mich. One dose worked a complete cure, and I can freely recommend it in all similar cases.
Yours truly,
Durham Bull.

Mention the American Bee Journal.

GOLDEN QUEENS

My Bees are bred from Texas. For Business, as well as for Beauty and Gentleness. Safe arrival and reasonable satisfaction guaranteed. Write for Price-List.

Untested, 75c—Warranted, \$1.

J. D. GIVENS, LISBON, TEX.
Box 3

10A24 Mention the American Bee Journal.

Globe Bee Veil

By Mail for One Dollar.



Five cross-bars are rivited in the centre at the top. These bend down and button to studs on a neck-band. The bars are best light spring steel. The neck-band is hard spring brass. The netting is white with face-piece of black to see through. It is easily put together and folds compactly in a case, 1x6x7 inches, the whole weighing but 5 ounces. It can be worn over an ordinary hat; fits any head; does not obstruct the vision, and can be worn in bed without discomfort. It is a boon to any one who flies bother, mosquito bite, or bees sting.
Net—50 cts. each.

This Veil we club with the Bee Journal for one year—both for \$1.75; or give free as a Premium for sending us 3 New Subscribers to the Bee Journal at \$1.00 each.

GEORGE W. YORK & CO.,
CHICAGO, ILLS.

Queens

3 or 5 Banded—Untested 60 cts.; 6 for \$1.25. Tested, 75c.; 6 for \$1.25.

CHAS. H. THIES,
STEELEVILLE, ILL.

Mention the American Bee Journal 34A17

READERS

Of this Journal who write to any of our advertisers, either in ordering, or asking about the Goods offered, will please state that they saw the Advertisement in this paper.

man and McCollum, both of Cresco, Howard Co., Iowa. They reported that they could find no other cause of death but the sting of the bee, which they found to be on one of the large blood vessels of the man's neck. This is rather an old story, as it happened in 1867, but if it was true then, it is just as true to-day. Now, if any of the readers of the Bee Journal (or any other man) ever knew of a similar case, I should like to have them report, as to whether the bee is capable of taking the life of the apiarist. If it be so, we ought to know it.
Colfax, Iowa. C. E. WOODWORTH.

[Although personally I never saw a case like the one mentioned by Mr. W., still I have no doubt of its being a fact. I have heard of people being kicked to death by horses, and fatally hooked by cattle; some have died from being bitten by poisonous snakes. But all such cases are quite rare. If I remember correctly, a young lady in Canada died only a few years ago, from the effects of a bee-sting on the temple. I think it pays to wear a good veil when handling bees, and take no chances.—Ed.]

A Report from Washington.

My crop for 1895 is 2,200 pounds of comb honey from 42 colonies, spring count, and increased to 74 colonies. My home apiary was allowed to swarm, as I had not time to control them, but at my out-apiary only a few colonies swarmed, and they were in the Dadant hive. The sectional brood-chamber hive is my choice. The more I use it the better I like it, as every necessary manipulation is so easily done, and with very little work compared to hanging frames. I have made 200 of them, and shall get my bees into them as soon as convenient.

I have no difficulty at all to dispose of my own honey at fair prices—12 to 17 cents for comb honey, and 8 to 15 cents for extracted. My first swarm came off on May 25, and the last on July 6. The honey-flow lasted about five weeks, principally from white clover; this season the honey is very thick, and candies in a few days.

G. D. LITTOY.

Tacoma, Wash., July 29.

GOLDEN QUEENS

From a \$50.00 Breeder obtained of Do Little. Also Leather Colored from one of A. I. Root's very best imported Queens. Price—1 Queen, 50c.; 6 for \$2.75; \$5.00 per dozen. Will warrant 95% of Queens purely mated; Bees to be gentle and excellent honey gatherers. H. G. QUINN,
34A16 BELLEVUE, Huron Co., OHIO.

Mention the American Bee Journal.

Orange-Blossom, Alfalfa or Sage

HONEY

For Sale Cheap.

15Dtt C. W. Dayton, Florence, Calif.

KANSAS BEE-KEEPERS!

—Take Notice—

Before placing your order for supplies write for my VERY LOW PRICES on

D. T. HIVES, SECTIONS, SMOKERS
SHIPPING-CASES AND
COMB FOUNDATION.Catalogue Free.
18E1f A. W. SWAN, Centralia, Kan.

Mention the American Bee Journal.

Honey & Beeswax Market Quotations.

ALBANY, N. Y., Aug. 19.—The honey market is now beginning, and I think this the best time to sell, especially white grades of comb honey. Receipts so far are light. We quote: White comb, 14@14c.; mixed, 12@14c. Extracted, white, 7@7c.; mixed, 6@6c.; buckwheat and dark, 5@5c.

H. R. W.

CHICAGO, ILL., July 30.—We are now having some inquiries for comb honey, and expect our first receipts of fancy white to sell at 15c.; No. 1 white will bring 14c.; no trouble to sell fancy honey; No. 2 quality sells at 10@13c., depending upon condition. White extracted, 6@7c., depending upon flavor; dark, 5@6c.

S. T. F. & Co.

CHICAGO, ILL., Aug. 7.—Some of the new crop of comb honey has come on the market, and we have sold some at 15c. There is also sale for the darker grades at 8@12c. Extracted, 5@7c., according to quality, flavor and color. Beeswax, 25@27c.

R. A. B. & Co.

CINCINNATI, O., Aug. 7.—Demand is lively for new extracted and comb honey, all old honey being closed out. Arrivals are fair but insufficient for the demand. Comb honey brings 14@15c. for choice white. Extracted, 4@7c.

Beeswax is in good demand at 20@25c. for good to choice yellow.

C. F. M. & S.

KANSAS CITY, Mo., Aug. 8.—The receipts of new comb honey are light. Demand is fair. We quote: Comb, No. 1 white, 1-lbs., 14@15c.; No. 2, 1-lbs., 12@13c.; No. 1, amber, 12@13c.; No. 2, 10c. Extracted, white, 6@6c.; amber, 5@6c.; dark, 4@4c.

C. C. C. & Co.

PHILADELPHIA, Pa., June 18.—The new crop of comb honey is arriving slowly, and is in fair demand. No new extracted honey has arrived in this market as yet. We quote: Comb honey, 9@13c. Extracted, 4@6c.

Beeswax is still declining. The adulteration of bee-wax has demoralized our market this spring, and has hurt our sales considerably. Price, 25@27c.

W. A. S.

NEW YORK, N. Y., July 6.—The market is about bare of comb honey and there is no demand at the present. The market is quiet on extracted. Demand is limited, with plenty of supply arriving to meet the demands and more. We quote: California, 6@6c.; Southern, choice, 6@6c. per gallon; common, 5@5c. per gallon. Beeswax is declining and selling at from 20@30c. at present, but the indications are that the price will decline still further.

H. B. & S.

MUTH'S HONEY EXTRACTOR

PERFECTION

Cold-Blast Smokers.

Square Glass Honey Jars, Etc.

For Circulars, apply to CHAS. F. MUTH & SON, Cor. Freeman & Central Aves., Cincinnati, O. Send 10c for Practical Hints to Bee-Keepers.

Mention the American Bee Journal.

List of Honey and Beeswax Dealers,

Most of whom Quote in this Journal.

Chicago, Ills.

J. A. LAMON, 43 South Water St.
R. A. BURNETT & Co., 163 South Water Street.

New York, N. Y.

F. I. SAGE & SON, 183 Rensselaer Street.
HILDRETH BROS. & SEIGLER,
120 & 122 West Broadway.
CHAS. ISRAEL & BROS., 486 Canal St.
I. J. STRINGHAM, 105 Park Place.

Kansas City, Mo.

O. C. CLEMOMS & Co., 423 Walnut St.

Buffalo, N. Y.

BATTERSON & Co., 167 & 169 Scott St.

Hamilton, Ills.

CHAS. DADANT & SON.

Philadelphia, Pa.

WM. A. SELSER, 10 Vine St.

Cincinnati, Ohio.

C. F. MUTH & SON, cor. Freeman & Central avs.

SAVE MONEY !!

It is always economy to buy the best, especially when the best cost no more than something not half so good. OUR FALCON SECTIONS are acknowledged to be superior to any on the market. The same is also true of our HIVES and BEE-KEEPERS' SUPPLIES, of which we make all modern styles. OUR PRICES will be found as low as those of any of our competitors, and in many cases lower, and you are always sure of getting first-class goods. We also publish THE AMERICAN BEEKEEPER, a monthly magazine (Fifth year) at 50c. a year, invaluable to beginners. Large illustrated catalogue and price-list free. Address,

THE W. T. FALCONER MFG. CO.,

JAMESTOWN, N. Y.

W. M. Gerrish, of East Nottingham, N. H., is our Eastern agent. New England customers may save freight by purchasing of him.

What's the Use of Keeping Bees

If you do not sell the honey? That's what we are here for. Get our high prices before selling.

C. R. HORRIS & CO.,
Commission Merchants,
224 South Water St., Chicago, Ill.
24A13 Mention the American Bee Journal.

I ARISE



TO SAY to the readers of the BEE JOURNAL, that DOOLITTLE

has concluded to sell—BEEES and QUEENS—in their season, during 1895, at the following prices:

One Colony of Italians on 9 Gallip frames, in light shipping-box \$7.00
Five Colonies..... 20.00
Ten Colonies..... 50.00
1 untested queen..... 1.00
6 " " queens 5.50
12 " " " 10.00
1 tested Queen... \$1.50
3 " " Queens... 4.50
1 select tested queen 2.00
5 " " Queens 5.00

Select tested queen, previous season's rearing 4.00
Extra Selected for breeding, THE VERY BEST. 6.00
About a Pound of BEES in a Two-frame Nucleus, with any Queen, \$2.00 extra.

☞ Circular free, giving full particulars regarding the Bees and each class of Queens.
Address

G. M. DOOLITTLE,

12A25t BORODINO, Onon. Co., N. Y.

HONEY QUEENS!

Have been carefully bred for producing comb honey for the past 14 years, and by a special method for producing large, long-lived, prolific Queens. Can furnish either 3 or 5 Banded stock, bred in separate yards. 3-Banded bred from my own or Imported Mother. No foul brood or paralysis. Warranted Queens, purely mated, 60 cts.; Tested, \$1.00; Selected Breeders, \$2.50. Discount on quantities.

27Atf J. H. GOOD, Nappanee, Ind.

Free Silver is a good thing but here's something better For You

Until further notice I will furnish COMB FOUNDATION as follows:

10 lbs. Heavy or Medium Brood Fdn. \$3.50
10 lbs. L.A. ht " 3.60
10 lbs. Thin Surplus Foundation.... 4.00
10 lbs. Extra-Thin Surplus Fdn..... 4.50

No orders will be accepted at these prices from persons living east of New York State.

For BEESWAX—fair quality, delivered here, 27c. cash; 29c. in trade.

W. J. Finch, Jr., Springfield, Ill

28A13 Mention the American Bee Journal.

Abbott's Space.

In response to many inquiries I will renew my special offer for a short time only:—

Five "St. Joe" Hives, 1½-Story, cut ready to nail—no sections—for \$3.50 to any one who has never had a crate of these Hives.

I sell Dadant's Foundation at their prices; pay CASH for BEESWAX, and keep a stock of

Shipping-Crates and Other Bee-Supplies.

SPECIAL PRICES the rest of the season. Write and say what you want.

EMERLON T. ABBOTT,

ST. JOSEPH, MO.

WHEN ANSWERING THIS ADVERTISEMENT, MENTION THIS JOURNAL.

3-Frame Nucleus and Italian Queen

—\$2.50.—

Untested Queens, 75c; Six for \$3.50.
Discount on Quantities.

FULL-LINE-OF-SUPPLIES.

I. J. STRINGHAM,
105 Park Place. NEW YORK, N. Y.
Mention the American Bee Journal.

PATENT WIRED COMB FOUNDATION

Has No Sag in Brood-Frames

Thin Flat-Bottom Foundation

Has No Fishbone in the Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made

J. VAN DEUSEN & SONS,
Sole Manufacturers,
Sprout Brook Montgomery Co., N. Y.

A Thousand Tons of Comb Honey

Will be made on the Foundation sold by us this year. That is why



WE NEED BEESWAX

Now is the time to order your Foundation for 1896. Although the

PRICES ARE REDUCED

on both Beeswax and Foundation for the balance of the season, we want all



The Beeswax You Have to Offer.

☞ Send for Catalogue of Bee-Supplies, Langstroth Revised, etc.

CHAS. DADANT & SON,

Mention the American Bee Journal.

HAMILTON, Hancock Co., ILL.

A LETTER

From A. Norton, of Monterey, Calif., reads as follows:

"The Queen that you sent me arrived in fine condition in 12 days from the time that I ordered her. (It takes 6 days for mail to go from here to Calif.) Twelve hours later she was introduced, and in 12 more was laying. I thank you for your promptness and for the beauty, size and excellence of the Queen."

From neighboring States I frequently get reports of Queens being received and INTRODUCED within 3 days from the time the order was sent. I not only advertise to send Queens by RETURN MAIL, but I DO do it; and I sell tested Queens of this year's rearing for only \$1.00 each, or six for \$5.00. One Queen and the REVIEW for only \$1.50.

Mention the American Bee Journal. W. Z. HUTCHINSON, FLINT, MICH.

Notice !

We beg to announce that we have completed arrangements with the Porters whereby we secure for this country the control of the sale of that very excellent and almost indispensable implement—

THE PORTER BEE-ESCAPE.

It will be manufactured by the Porters, as formerly, but write to us for prices in both large and small quantities.

The A. I. Root Co., Medina, Ohio.